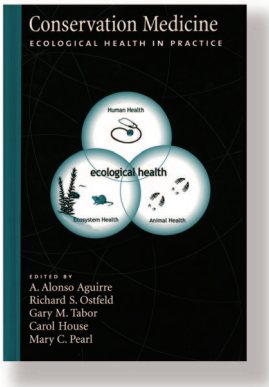
Announcements | Book Review

Conservation Medicine: Ecological Health in Practice

Edited by A. Alonso Aguirre, Richard S. Ostfeld, Gary M. Tabor, Carol House, and Mary C. Pearl.
New York:Oxford University Press, 2002. 407 pp.
ISBN: 0-19-515093-7, £35.00 cloth.



Over the past century, humanity has had a devastating impact on the earth's wildlife and ecosystems. We are in fact living through the largest mass extinction since the end of the dinosaurs 65 million years ago. Unless effective solutions are found, this new century will see the demise of countless more species and pristine ecosystems, particularly in the tropics. This is arguably the true crisis of our time. Underlying it are enormous global issues: overpopulation, overconsumption by billions of people, and desperate poverty among billions more. Clearly, humanity has yet to find a way to live on this planet that will allow the conservation of wildlife, of ecosystems, or even of our own species. For example, it is estimated that the equivalent of six earths would be needed to sustain the current world's population if people everywhere consumed natural resources at the rate we do in the United States.

Understanding and coping effectively with an emerging crisis may sometimes require the birth of action-oriented "crisis disciplines." *Conservation Medicine: Ecological Health in Practice* brings together an impressive group of experts from diverse specialties (medicine, veterinary science, conservation biology, epidemiology, parasitology, public health, and others) to examine the links among human health, wildlife health, and ecosystem health.

The product of a conference that took place in 1999, this book describes an undertaking that is still very much a work in progress. In any new multidisciplinary field, early efforts may focus understandably on self-definition. First texts may also run the danger, as authors seek to carve out new academic territory, of becoming biased aggregations of spottily illustrated generalizations. *Conservation Medicine,* perhaps best seen as a text that is seminal rather than definitive, largely avoids these problems, but not completely.

The book begins with several authors' descriptions of what "conservation medicine" is and why the field is coming into being. These general outlines are then given form and color by a fascinating series of broad-ranging and loosely organized topics and perspectives. Leafing through, we begin to discover a web of sometimes-unexpected links among the health of ecosystems, wildlife, and humans. We also learn how "practitioners of conservation medicine" are starting to address some of these links. Examples include:

- how factors such as climate change, endocrine disruptors, and toxic microalgae affect wildlife and human health
- the importance of biodiversity for human health (as medical models, sources of medicines, factors in the ecology of infectious diseases, and indicators of environmental quality), with a review of 769 biodiversity-related biomedical research projects funded by the National Institutes of Health from 1995 to 1997
- how the health of rainforest-dwelling peoples depends on such diverse factors as forest integrity, floods, seasonality, community organization, education, gender dynamics, national budgets, and global markets
- how wildlife health relates to environmental security
- the health hazards of ecotourism
- the causes and impacts of emerging infectious diseases of humans and wildlife
- how the health of terrestrial and marine animals and ecosystems are monitored, and descriptions of innovations using stool DNA and retrovirus evolution as markers of animal population dynamics, stool hormones to indicate species stress, and animal behaviors as proxies for the health of ecosystems
- how habitat fragmentation and reduced biodiversity can increase the risk of Lyme disease infection
- how land use changes such as deforestation and water projects influence the ecology of malaria and other vector-borne infections
- how ecological health and wildlife disease are managed in national parks
- the role of zoos in the recovery and conservation of endangered species
- how reducing the burden of infectious disease among park workers in Africa could prevent a devastating epidemic among the world's 650 remaining mountain gorillas
- how efforts to control livestock diseases are affecting wildlife health and ecosystems in Botswana
- teaching ecosystem health in an undergraduate medical curriculum.

Conservation Medicine goes a long way toward teaching us to analyze health problems in ecological context. For developing countries, where most biodiversity exists, what seems missing in this first edition is a focus on the politico-economic context of health and conservation. Despite all that science tells us about the health and environmental problems caused by destruction of rainforests, coral reefs, and other key ecosystems, this destruction largely continues, driven by benefits (even if short-term) that accrue to key actors. Policy-relevant science for sustainable conservation in developing countries ought to address poverty (including lack of basic health care) in communities affected by conservation, and to consider costs and benefits (perceived or not) affecting the well-being of all stakeholders, from the local to the multinational.

Conservation Medicine is a welcome beginning, an invitation to help build a transdisciplinary approach to the links between conservation and health in today's world. Continued work over time will further delineate the scope and direction of this important endeavor. If the book gets the attention it deserves, it will inspire researchers, teachers, funders, policy makers, and the general public in both developed and developing countries to become involved in finding collaborative solutions to the conservation crisis.

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Analyses of Hazardous Substances in Air, Vol. 8
Antonius Kettrup, ed.
Weinheim, Germany:Wiley-VCH Verlag, 2003. 220 pp. ISBN: 3-527-27793-5, $105

Bioindicators and Biomonitors: Principles, Concepts, and Applications
B.A. Markert, A.M. Breure, H.G. Zechmeister, eds.
New York:Elsevier Science, 2003. 1040 pp. ISBN: 0-08-044177-7, $200

Calculations for Molecular Biology and Biotechnology: A Guide to Mathematics in the Laboratory
Frank H. Stephenson
San Diego, CA:Academic Press, 2003. 340 pp. ISBN: 0-12-665751-3, $44.95

Chemical Analysis of Contaminated Land
K. Clive Thompson, Paul Nathanail, eds.
London: Blackwell Science, 2003. 304 pp. ISBN: 1-84127-334-1, $141

Occupational Toxicants: Critical Data Evaluation for MAK Values and Classification of Carcinogens, Vol. 19
Helmut Greim, ed.
Weinheim, Germany:Wiley-VCH Verlag, 2003. 342 pp. ISBN: 3-527-27796-X, $134

Protein Misfolding and Disease: Principles and Protocols
Peter Bross, Nels Gregersen
Totowa, NJ:Humana Press, 2003. 375 pp. ISBN: 1-58829-065-4, $99.50

Reclamation of Contaminated Land: Modules in Environmental Science
Paul Nathanail, Paul Bardos
Hoboken, NJ:John Wiley & Sons, 2003. 224 pp. ISBN: 0-471-98560-0, $85

Statutes on Environmental Law, 4th edition
R. Duxbury, S. Morton
New York:Oxford University Press, 2003. 638 pp. ISBN: 0-19-925528-8, $22.95

Understanding Urban Ecosystems: A New Frontier for Science and Education
Alan R. Berkowitz, Charles H. Nilon, Karen S. Hollweg, eds.
Heidelberg, Germany:Springer-Verlag, 2002. 504 pp. ISBN: 0-387-95496-1, $149

VOC Emissions from Wastewater Treatment Plants: Characterization, Control and Compliance
Prakasam Tata, Jay Witherspoon, Cecil Lue-Hing
Boca Raton, FL:CRC Press, 2003. 408 pp. ISBN: 1-56676-820-9, $149.95

World Agriculture and the Environment: A Commodity-by-Commodity Guide to Impacts and Practices
Jason Clay
Washington, DC:Island Press, 2003. 282 pp. ISBN: 1-55963-367-0, $70 cloth; 1-55963-370-0, $35 paper